

MicroStation V8i – Changing & Modifying Elements

9.0 Change Attributes tool box



These tools in the Change Attributes tool box are used to change an elements active element attribute settings.

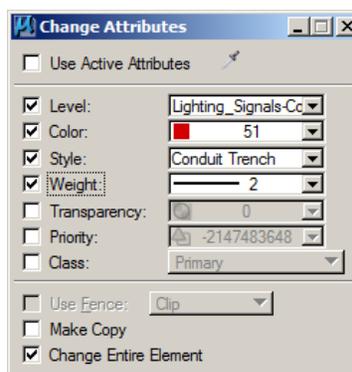
To	Select in the Change Attributes tool box
Change an elements level, color, line style or line weight	 Change Element Attributes
Modify an elements Line Style Attribute by shifting it	 Modify Line Style Attributes
Match all of the attributes of an element or text	 SmartMatch

9.1 Change Element Attributes



Used to change selected attributes of an element(s). *Change Element Attributes* tool settings are used to specify the new attribute settings.

The *Change Element Attributes* tool is efficient for changing the level of an element to a level that is currently turned off (the effect of “sending” an element to another level) without changing the active attributes. Also, since it allows you to match and change attributes using the same tool, *Change Element Attributes* is very useful when you are doing repetitive changes to many different elements (like going though an entire drawing cleaning up line weights).



Tool Settings	Effect
Use Active Attributes	If on, the active attributes are affected when you change the attribute settings. If off (the default), the active attributes are not affected when you change the attribute settings.
Level	If on, level is included when changing or matching settings.
Color	If on, color is included when changing or matching settings.

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Style	If on, line style (and any active line style modifiers) is included when changing or matching settings.
Weight	If on, line weight is included when changing or matching settings.
Transparency	We do not use this at MoDOT.
Priority	We do not use this at MoDOT.
Class	If on, element class is included when changing or matching settings.
Use Fence	If on, the selected attributes of the fence contents are changed.
Make Copy	If on, the element(s) are copied and the attributes of the copy(s) are changed; the attributes of the original(s) are not changed.
Change Entire Element	If on, the attributes for the entire element are changed. Take, for example, where you want to change the color for a text style to green, where the existing text color is red and the underline color blue. If Change Entire Element is off, only the text will change color. If Change Entire Element is on, both the text and the underline will change to the new color.

To change an element's attributes (those that are set to on)

1. Select the Change Element Attributes tool.
2. Turn on Use Active Attributes to change an element's attributes to match the active element attribute settings.
Or
Turn off Use Active Attributes to change an element's attributes without using or affecting the active element attribute settings.
3. Identify the element.
4. Accept the change.

To match the active attributes to an element and use these settings to change the attributes of other elements

1. Select the Change Element Attributes tool.
2. Identify the element to match.
3. Turn on the attributes you want to change in the next element(s) selected.
4. Select or fence the element(s).
5. Accept the change.

To change the attributes of one element to match those of another, without affecting the active attributes

1. Select the Change Element Attributes tool.
2. Turn off Use Active Attributes.

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3. Identify the element to match.
 4. Turn on the attributes you want to change in the next element(s) selected.
 5. Select or fence the element(s).
 6. Accept the change.
- To change the Active Level, Active Color, Active Line Style, Active Line Weight, Active Element Transparency, Active Element Priority, or Active Class and the corresponding attribute of the selected element(s) in one step, use the controls in the Attributes toolbox.
 - To set the active element attributes so they match those of an element in the design, you can also use the Match Element Attributes tool.

9.2 Modify Line Style Attributes



Used to modify the line style attributes of an element with a custom line style. You can enter a value for the attribute, or modify it graphically. The icon bar contains options for setting the type of custom line style attribute to modify.



Tool Settings	Effect
Width	 The starting, or Origin, width and the End width of an element.
Start Width	 The starting, or Origin, width of an element.
End Width	 The End width of an element.
Scale	 The scale factor applied to strokes.
Dash Scale	 The scale factor applied to variable length dash strokes.
Gap Scale	 The scale factor applied to variable length gap strokes.
Shift	 The Shift distance by which the stroke pattern is shifted relative to the beginning of an element or its segments.

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Width	(Width icon selected only) Specifies the starting and end width of an element. If Absolute is on, this value represents the width value. If Absolute is off, this value represents the amount to modify the existing width value.
Start Width	(Start Width icon selected only) Specifies the starting width of an element. If Absolute is on, this value represents the width value. If Absolute is off, this value represents the amount to modify the existing width value.
End Width	(End Width icon selected only) Specifies the end width of an element. If Absolute is on, this value represents the width value. If Absolute is off, this value represents the amount to modify the existing width value.
Scale	(Scale icon selected only) Specifies the scale factor applied to strokes. If Absolute is on, this value represents the scale factor. If Absolute is off, this value represents the amount to modify the existing scale factor.
Dash Scale	(Dash Scale icon selected only) Specifies the scale factor applied to variable length dash strokes. If Absolute is on, this value represents the scale factor value. If Absolute is off, this value represents the amount to modify the existing scale factor.
Gap Scale	(Gap Scale icon selected only) Specifies the scale factor applied to variable length gap strokes. If Absolute is on, this value represents the scale factor value. If Absolute is off, this value represents the amount to modify the existing scale factor.
Shift	(Shift icon selected only) Specifies the shift distance by which the stroke pattern is shifted relative to the beginning of an element or its segments. If Absolute is on, this value represents the shift distance value. If Absolute is off, this value represents the amount to modify the existing shift distance value.
Absolute	If on, the value entered in the adjacent text field represents the actual value for the width, scale, or shift distance. If off, the value in the text field represents the amount to modify the current value. For example, suppose you have a custom line style with a scale of 2.0, and you specify a Scale value of 3.0. If Absolute is on, the line style scale will be 3.0. If Absolute is off, the line style scale will be 6.0.
True Width	(Width, Start Width, or End Width icon selected only) If on, the line style width is not affected by a change in line style scale. The line style scale may be modified by the Modify Line Style Attributes tool, as well as by the global line style scale (ACTIVE LINSTYLE SCALE key-in). For example, if you set width to 2.0 and have a scale of 3.0, a line with True Width on will be 2.0 working units wide, while a line with True Width off will be 6.0 working units wide.
Use Fence	If on, the custom line style attributes of elements inside the fence are modified.

To modify a line style attribute graphically

1. Select the Modify Line Style Attributes tool.
2. Select the icon that corresponds to the attribute to modify.
3. Identify the element.
4. Move the pointer to adjust the setting.
5. Accept the change.

9.3 SmartMatch



Used to change all active element attribute settings, including those specific to particular element types, so they match the attributes of an element in the design. When a cell is matched, the active scale factors and Active Cell are also matched.

Tool Settings	Effect
Match Multi-line Caps	If on, multi-line caps settings are matched as well.
Match Annotation Scale	If on, annotation scales are matched as well.

To match an element's attributes

1. Select the element.
2. Select the *Match All Element Settings* tool.

Alternative Method — To match an element's attributes

1. Select the Match All Element Settings tool.
 2. Identify the element.
 3. Accept the new active settings.
- This tool is also referred to as *SmartMatch*.
 - To change the color, line style, line weight, or level of an element(s) to the active element attributes, use the Change Element Attributes tool.

9.4 Modify tool box



Used to do the following:

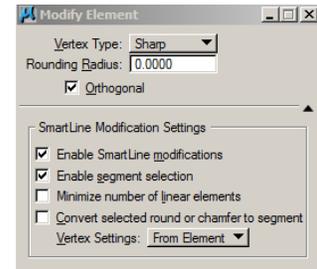
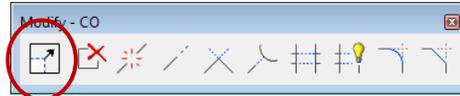
- Move a vertex or segment of a line, line string, multi-line, curve, B-spline control polygon, shape, complex chain, or complex shape.
- Scale a block about the opposite vertex.
- Modify rounded segments of complex chains and complex shapes created with the Place SmartLine tool while preserving their tangency.
- Change rounded segments of complex chains and complex shapes to sharp and vice-versa.
- Scale a circular arc while maintaining its sweep angle.
- Change a circle's radius or the length of one axis of an ellipse.
- Move dimension text or modify the extension line length of a dimension element.

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Elements with multiple segments are line strings, shapes, and complex chains and complex shapes placed with the Place SmartLine tool. The *Modify Element* tool not only lets you modify vertices and segments, but also lets you change a vertex's type (Sharp, Rounded, or Chamfered).

Settings for the *Modify Element* tool vary, depending on the type of element you are modifying, and display when you select a segment or a vertex of the element.

9.5 Modify Elements



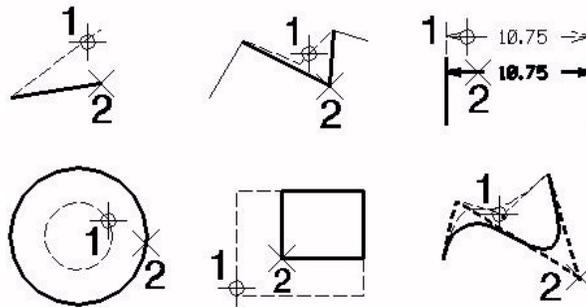
Tool Settings	Effect
Vertex Type	(Vertex selected only) Displays the type of vertex selected and lets you modify the vertex type. <ul style="list-style-type: none"> • Sharp — Sets the vertex to a point. • Rounded — Sets the vertex to rounded and lets you define the Rounding Radius value. • Chamfered — Sets the vertex to chamfered and lets you define the Chamfer Offset value.
Rounding Radius	(Vertex Type set to Rounded) Sets the arc radius for a rounded vertex.
Chamfer Offset	(Vertex Type set to Chamfered) Sets the two (equal) distances from the vertex to the end points of the chamfer.
Orthogonal	(Vertex of an orthogonal shape selected only). If on, the sides adjoining the vertex remain orthogonal as the vertex is moved. If off, the sides adjoining the vertex do not remain orthogonal as the vertex is moved.
SmartLine Modification Settings icon	Displays the controls for defining how SmartLine elements are modified with the <i>Modify Element</i> tool.
Enable SmartLine modifications	If on (the default), modifications to vertices and segments of SmartLines take into account the adjoining elements. For example, lines that are tangential to a rounded vertex, remain tangential. If off, vertices and segments of SmartLines are modified individually. <ul style="list-style-type: none"> • Turning off this setting disables the remaining settings as they apply only to SmartLine style modifications.
Enable segment selection	If on (the default), segments of SmartLines may be selected, as well as the vertices. If off, only vertices may be modified.
Minimize number of linear elements	If on, attempts to reduce the number of component elements in a complex chain or shape. For example, a number of individual lines that have been chained together may be converted to a line string. If off, does not attempt to reduce the number of component elements in a complex chain or shape.

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Convert selected round or chamfer to segment	If on, when a rounded or chamfered vertex is selected, it is converted to a segment (arc or linear segment) so that it can be modified as such. This applies only to the selected round or chamfer, not to the whole chain or shape. After modification, the component will not be treated as a round or chamfer again.
Vertex Settings	<p>Defines the type of vertex to use.</p> <p>From Element — Uses the element's own settings.</p> <p>Last Used — Uses the type of vertex that was last used when modifying a SmartLine element.</p> <ul style="list-style-type: none"> Use this setting to set the vertex being modified to sharp, rounded, or chamfered, along with its radius or chamfer offset. This can be convenient when changing the type or size of many vertices, eliminating having to enter values for each vertex.

To modify an element

1. Select the *Modify Element* tool.
2. Identify the element close to the vertex, segment, or axis to modify.
3. Enter a data point to make the modification.



Modify Element. Clockwise from top left: moving the endpoint of a line, moving a vertex of a line string, modifying dimension extension line length, moving a vertex of a B-spline control polygon, scaling a block, and changing the radius of a circle.

To modify the endpoint of a line

1. With AccuDraw active, select the *Modify Element* tool.
2. Identify the end of the line that you wish to modify.
The drawing plane origin moves to the *opposite* end of the line, and the coordinate system aligns its x-axis with the line. Additionally, the length of the line is displayed in the AccuDraw window.
3. (Optional) Rotate the drawing plane axes.
4. (Optional) Preview the modifications by keying in desired changes in the AccuDraw window.
5. Enter a data point to complete the modification.

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To modify a circle

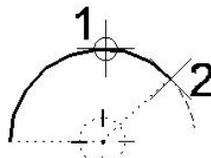
1. With AccuDraw active, select the *Modify Element* tool.
2. Identify the circle.
The drawing plane origin moves to the center of the circle. In addition, the coordinate system switches to Polar, and aligns with the view axes.
3. (Optional) Rotate the drawing plane axes.
4. (Optional) Preview the modifications by keying in a radius value in the AccuDraw window. (When modifying a circle, any value keyed in the AccuDraw window defines a new radius.)
5. Enter a data point to complete the modification.

To modify an ellipse

1. With AccuDraw active, select the *Modify Element* tool.
2. Identify the ellipse by entering a data point near the axis to modify.
The drawing plane origin moves to the center of the ellipse, and the coordinate system aligns its x-axis with the primary axis of the ellipse.
3. (Optional) Rotate the drawing plane axes.
4. (Optional) Preview the modifications by keying in desired changes in the AccuDraw window.
5. Enter a data point to complete the modification.

To modify the sweep angle of an arc

1. With AccuDraw active, select the *Modify Element* tool.
2. Identify the arc.
3. From the Method option menu in the tool settings window, choose Angle.
The drawing plane origin moves to the center of the arc, and the coordinate system aligns its x-axis with the start of the arc's sweep.
4. (Optional) Rotate the drawing plane axes.
5. (Optional) Preview the modifications by keying in desired changes in the AccuDraw window.
6. Enter a data point to complete the modification.



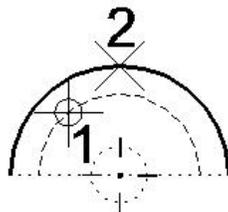
Modifying the sweep angle of an arc

- You can adjust the arc sweep by either complement of the angle (180° either way).

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To modify the radius of an arc without changing its center point

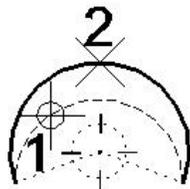
1. With AccuDraw active, select the *Modify Element* tool.
2. Identify the arc.
3. From the Method option menu in the tool settings window, choose Radius About Center. The drawing plane origin moves to the center of the arc, and the coordinate system aligns with the view axes.
4. (Optional) Rotate the drawing plane axes.
5. (Optional) Preview the modifications by keying in a radius value in the AccuDraw window. (When modifying an arc, any value keyed in the AccuDraw window defines a new radius.)
6. Enter a data point to complete the modification.



Modifying the radius of an arc without changing its center point.

To modify the radius of an arc without changing its endpoints

1. With AccuDraw active, select the *Modify Element* tool.
2. Identify the arc.
3. From the Method option menu in the tool settings window, choose Radius Preserve Ends. The drawing plane origin moves to the center of the arc, and the coordinate system aligns with the view axes.
4. (Optional) Rotate the drawing plane axes.
5. (Optional) Preview the modifications by keying in a radius value in the AccuDraw window.
6. Enter a data point to complete the modification.

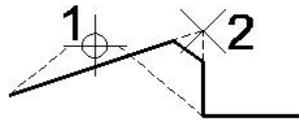


Modifying the radius of an arc without changing its endpoints.

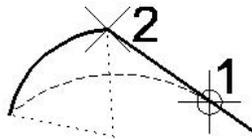
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To modify a vertex of a multi-segment element

1. With AccuDraw active, select the *Modify Element* tool.
2. Identify the element by entering a data point near the vertex to modify.
The drawing plane origin moves to the vertex, and the coordinate system aligns with the view axes.
3. (Optional) Rotate the drawing plane axes.
4. (Optional) Preview the modifications by keying in desired changes in the AccuDraw window.
5. Enter a data point to complete the modification.



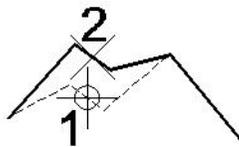
Modifying a chamfered vertex



Modifying the vertex of a Linear segment and an Arc segment

To modify a linear segment of a multi-segment element

1. With AccuDraw active, select the *Modify Element* tool.
2. Identify the element by entering a data point near the segment's midpoint.
The drawing plane origin moves to the identification point, and the coordinate system aligns its x-axis with the segment.
3. (Optional) Rotate the drawing plane axes.
4. (Optional) Preview the modifications by keying in desired changes in the AccuDraw window.
5. Enter a data point to complete the modification.

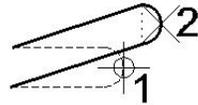


Modifying a Linear segment

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To modify an arc segment of a multi-segment element

1. With AccuDraw active, select the *Modify Element* tool.
2. Identify the element by entering a data point near the segment's midpoint. The drawing plane origin moves to the identification point.
3. (Optional) Preview the modifications by keying in desired changes in the AccuDraw window.
4. Enter a data point to complete the modification.



Modifying an Arc segment

To move a linear segment parallel to itself

1. With AccuDraw active, select the *Modify Element* tool.
2. Identify the element by entering a data point near the segment's midpoint. The drawing plane origin moves to the identification point, and the coordinate system aligns its x-axis with the segment.
3. Position the pointer on the drawing plane's y-axis.
4. Press the <Enter> key. The movement of the segment is constrained parallel to its current location.
5. Enter a data point to complete the modification.

To modify the vertex of orthogonal segments

1. With AccuDraw active, select the *Modify Element* tool.
2. Identify the element by entering a data point near the vertex to modify. The drawing plane origin moves to the vertex, and the coordinate system aligns with the segments.
3. (Optional) Rotate the drawing plane axes.
4. (Optional) Preview the modifications by keying in desired changes in the AccuDraw window.
5. Enter a data point to complete the modification.

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To change a vertex type

1. With AccuDraw active, select the *Modify Element* tool.
 2. Identify the element by entering a data point near the vertex to modify.
The drawing plane origin moves to the vertex. If the vertex is contained within a right angle, the coordinate system aligns with the right angle.
 3. From the Vertex Type option menu in the tool settings window, choose the desired type — Sharp, Rounded, or Chamfered.
 4. If changing Vertex Type to Rounded, key in the desired rounding radius, in working units (MU:SU:PU) in the tool settings window's Rounding Radius field.
 5. If changing Vertex Type to Chamfered, key in the desired chamfer offset, in working units (MU:SU:PU) in the tool settings window's Chamfer Offset field.
 6. To maintain the vertex in its original location — *that is, to just change its type* — enter a data point at the drawing plane origin.
Or
To otherwise modify the vertex, follow steps 3-5 in the procedure to modify a vertex of a multi-segment element.
- You can modify a line, line string, multi-line, arc, circle, ellipse, curve, shape, text, or complex element by dragging its handles when selected.
 - To choose SmartLine Modification Settings, click the arrow in the bottom right corner of the tool settings window.
 - Arc axes cannot be modified with the *Modify Element* tool. Instead, use the Modify Arc Axis tool.

9.6 Partial Delete

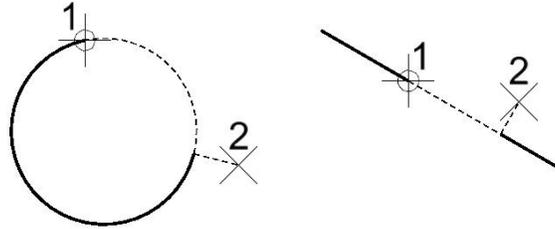


Used to delete part of an element. The first data point defines the start point of the deletion and the second data point defines the direction and extent of the deletion.

- A closed element is turned into an open element — an ellipse or circle becomes an arc; a shape becomes a line string; a closed B-spline curve becomes an open B-spline curve.
- If an interior portion of an open element — line, line string, multi-line, curve, or arc — is partially deleted, the element is divided into two elements of the same type.

To delete part of an element

1. Select the Delete Part of Element tool.
2. Identify the element at one end of the part to delete.
3. Enter a data point to define the other end of the part to delete.



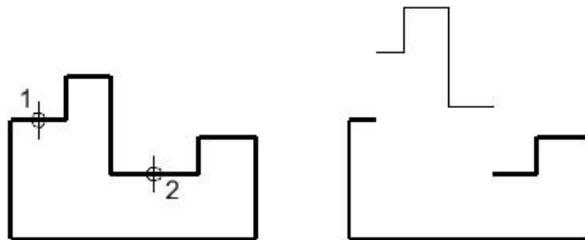
9.7 Break Element



Used to break a linear element at a defined point.

To break an element at a defined point

1. Select the *Break Element* tool.
2. Select the element at the point where the break is required.
3. Accept to place the break point.

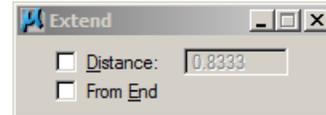
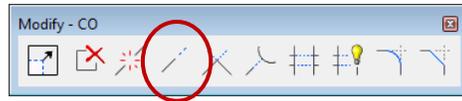


Left: Placing break points in the shape

Right: After placing break points, the two sections can be manipulated individually.

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9.8 Extend

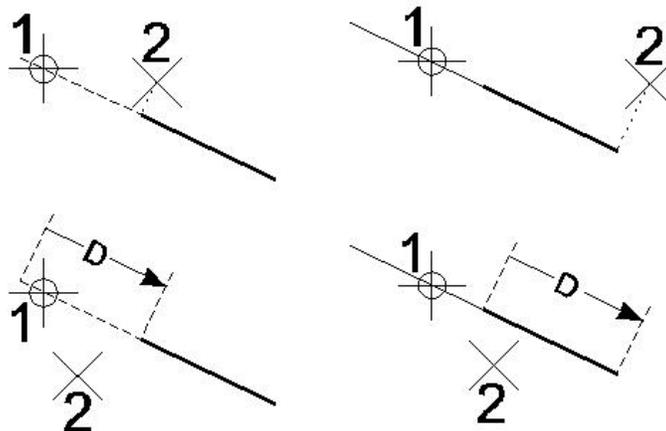


Used to extend or shorten a line or an end segment of a line string or multi-line.

Tool Settings	Effect
Distance	<p>If on, sets the distance.</p> <ul style="list-style-type: none"> • A negative distance shortens the line. • A positive distance extends the line.
From End	<p>(Applies for Distance off only) If on, the extension, or shortening, of the line is relative to the nearest endpoint to the identification point. If off, the extension, or shortening, of the line is relative to the origin point of the line, no matter where it is identified</p>

To extend or shorten a line by entering a data point

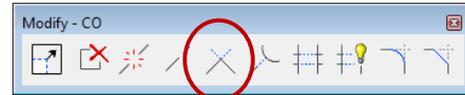
4. Select the *Extend* tool.
5. Identify the line near the endpoint to modify.
6. If Distance is on, accept the modification.
Or
If Distance is off, enter a data point to define the new endpoint.



In each example, identify the line (1) and accept the extension (2). (Cont. next page)

Top: Defining the new endpoint graphically when Distance is off. Bottom: Defining the new endpoint when Distance is on. If the Distance, denoted by "D," is negative, the line is shortened. If the Distance is positive, the line is lengthened.

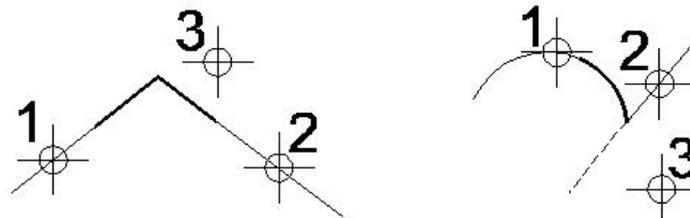
9.9 Extend 2 Elements to Intersection



Used to extend or shorten two lines, line strings, or arcs to their intersection.

To extend two elements to their intersection

1. Select the Extend Two Elements to Intersection tool.
2. Identify the first element.
3. Identify the second element.
4. Accept the modification.



Extend Two Elements to Intersection tool. Left: Lengthening two lines. Right: Lengthening an arc and shortening a line.

No modification is made if the identified elements cannot be extended so that they intersect. When an element is extended, the end nearest the point where it was identified is moved, and the other end remains unchanged.

When an element is shortened, the part of the element that is identified is kept.

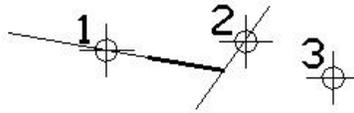
9.10 Extend Element to Intersection



Used to extend or shorten a line, line string, or arc to its intersection with another element.

To extend an element to its intersection with another element

1. Select the Extend Element to Intersection tool.
2. Identify the element to extend or shorten.
3. Identify the element to which the first element will be extended or shortened.
4. Accept the modification.



9.11 Trim Elements



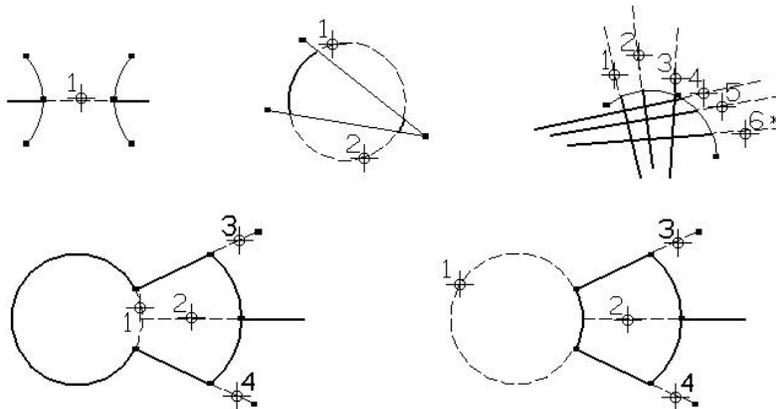
Used to trim or cut an element or series of elements at their intersection with one or more cutting elements. The cutting element and the element that is trimmed can be lines, line strings, arcs, curves, B-spline curves, shapes, ellipses, complex chains, or complex shapes.

To trim an element(s)

1. Use the *Element Selection* tool to select a cutting element(s).
2. Select the *Trim Element* tool.
3. Identify an element to trim.
The element is highlighted and how it will be trimmed is dynamically displayed.
4. Accept the trimmed element.
5. Go back to step 4 to identify another element to trim.
Or
Reset to finish.

Alternative Method — To trim an element(s)

1. Select the *Trim Element* tool.
2. Identify the cutting element.
3. Follow steps 3–5 above.

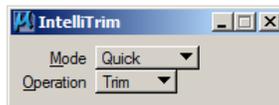


Trim Element tool. The cutting elements are indicated by handles.

9.12 IntelliTrim



- Used to simultaneously trim, extend or cut multiple elements.
- The cutting elements or elements to which you can extend other elements are lines, line strings, ellipses, arcs, curves, shapes, complex strings, complex shapes, text nodes, and cell headers.
- Elements that can be cut or trimmed are lines, line strings, curves, arcs, ellipses, shapes, B-spline curves, complex strings, and complex shapes.
- The only elements that can be extended are lines, line strings, complex chains that end with a line or line string, and b-spline curves.



Tool Settings	Effect
Quick Mode	<p>Operation:</p> <ul style="list-style-type: none"> • Trim — If on, elements are trimmed. • Extend — If on, elements are extended. • Cut — If on, elements are cut. (You will not actually see where the element was cut until you select it.)
Advanced Mode	<p>Operation:</p> <p>Toggleing between Trim and Extend in Advanced Mode causes all intersections and extension points to be recalculated and displayed.</p> <ul style="list-style-type: none"> • Trim — If on, elements are trimmed. • Extend — If on, elements are extended. • Cut — Dimmed if Advanced is selected.
Select Elements to Trim	If selected, each element that is identified is designated as an element to trim (or extend).
Select Cutting Elements	If selected, each element that is identified is designated as a cutting element.

To trim (or extend) multiple elements

1. Select the elements to trim or the cutting elements.
2. Select the *IntelliTrim* tool.
If the tool setting Operation option is set to Trim, the selected elements are highlighted.
If the tool setting Operation option is set to Cut, the selected elements are highlighted and dashed.

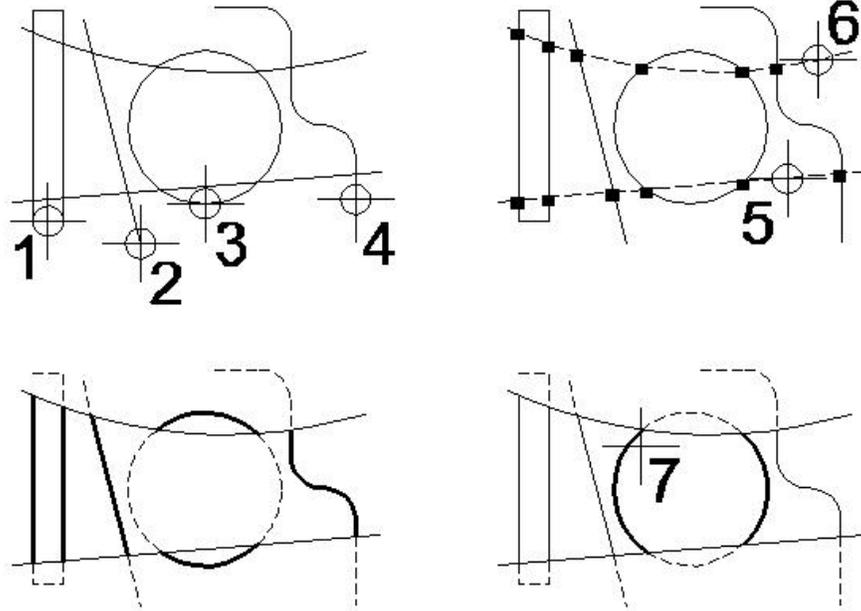
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3. If the selected elements are the elements to trim, identify each cutting element.
Or If the selected elements are the cutting elements, identify each element to trim.
All potential cutting points are shown as small dots.
4. When done identifying elements, Reset.
The proposed results of the operation are displayed. The trimmable elements remain highlighted to indicate the tentative nature of the display.
5. If the results are satisfactory, Reset to accept them. Otherwise, continue with step 6.
6. For each element whose trim or extension result is not as you desire, enter a data point on the element on or near *the part of the element you wish to keep*. When entering these guide points, you need not be concerned about “inside” and “outside” (because the cutting elements do not have to be connected or closed).
For each element to trim, the series of entered guide points is evaluated and the part of the element that is closest to the closest guide point is kept. Every time the element crosses a cutting element, it is cut.
7. When done modifying the results, Reset.

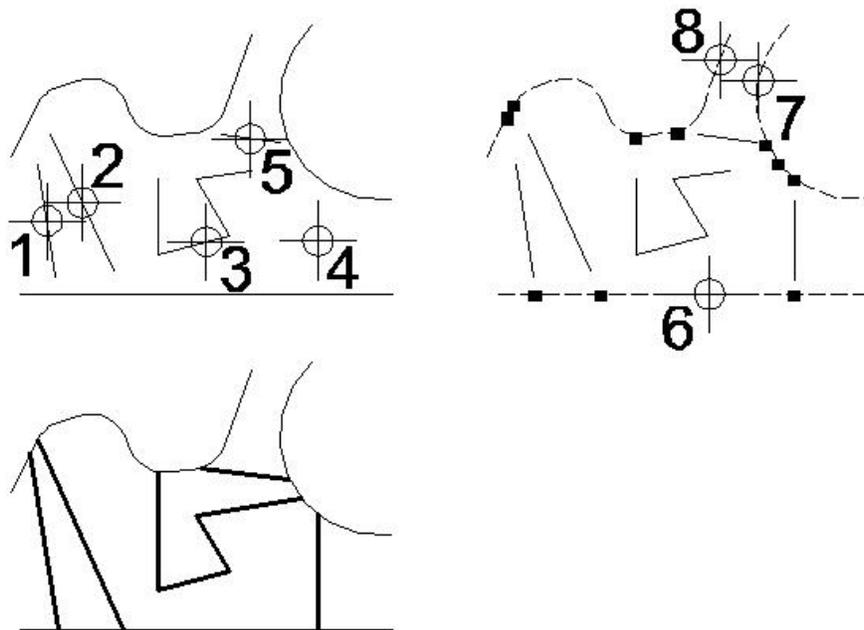
Alternative Method — To trim (or extend) multiple elements

1. Select the *IntelliTrim* tool.
2. Identify each element to trim.
3. When done identifying elements, Reset.
4. Identify each cutting element.
5. When done identifying elements, Reset. The proposed results of the operation are displayed. The trimmable elements remain highlighted to indicate the tentative nature of the display.
6. If the results are satisfactory, Reset to accept them. Otherwise, continue with step 7.
7. For each element whose trim or extension result is not as you desire, enter a data point on the element on or near *the part of the element you wish to keep*. When entering these guide points you need not be concerned about “inside” and “outside” (because the cutting elements do not have to be connected or closed).
For each element to trim, the series of entered guide points is evaluated and the part of the element that is closest to the closest guide point is kept. Every time the element crosses a cutting element, it is cut.
8. When done modifying the results, Reset.

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Trimming multiple elements. Top Left: Identify the elements to be trimmed (points 1-4), with a Reset to finish. Top Right: Identify the cutting elements (points 5-6), with a Reset to finish. Proposed cutting points appear as small dots. Bottom Left: Reset to display the proposed result. Bottom Right: Reverse the result of any incorrect cuts by entering a data point near the part of the element that you wish to keep (point 7). Reset to finish.

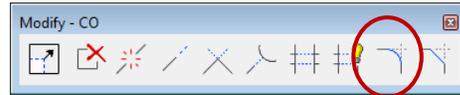


Extending multiple elements. Top Left: Identify the elements to be extended (points 1-5), with a Reset to finish. Top Right: Identify the cutting elements (points 6-8), with a Reset to finish. Proposed cutting points appear as small dots. Bottom: Reset to display the proposed result. A further Reset completes the operation.

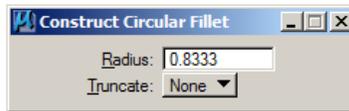
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- At any point while designating elements, you can switch between identifying elements to trim and identifying cutting elements by selecting the appropriate radio button in the tool settings window. If the focus is on one of the radio buttons, you can select the other simply by pressing <space bar> or the Reset button.
- To change an element from an element to trim to a cutting element, or vice-versa, simply reidentify it with the corresponding radio button selected. It is possible — and in some cases efficient — to select both the elements to trim and the cutting elements prior to selecting *IntelliTrim*. and then reidentify those elements whose designation is wrong.
- If an element cannot be either extended or trimmed, it is deleted under the following condition: there is a cutting element directly between the closest guide point and the element; otherwise the element is not modified.

9.13 Construct Circular Fillet



Used to construct a circular fillet (arc) between two elements (lines, line strings, circular arcs, circles, or shapes), two segments of a line string, or two sides of a shape.

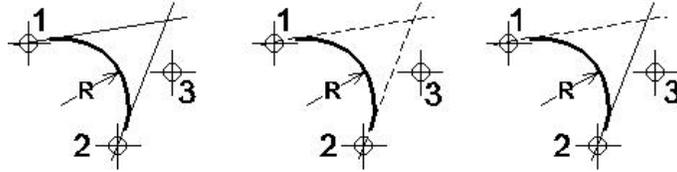


Tool Settings	Effect
Radius	Sets the fillet's radius.
Truncate	<p>Sets which side(s) are truncated.</p> <p>None — Neither element or segment is truncated.</p> <p>Both — Both elements or segments are truncated at their point of tangency with the fillet.</p> <p>First — The first element or segment identified (step 2) is truncated at its point of tangency with the fillet.</p>

To construct a circular fillet

1. Select the Construct Circular Fillet tool.
2. Identify the first element or segment.
If Truncate is set to First, this element or segment is truncated.
3. Identify the second element or segment.
4. Accept the fillet and truncation(s), if any.

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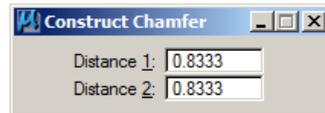
Construct Circular Fillet. From left: Truncate set to None, Both, and First.

9.14 Construct Chamfer



Used to construct a chamfer between either of the following:

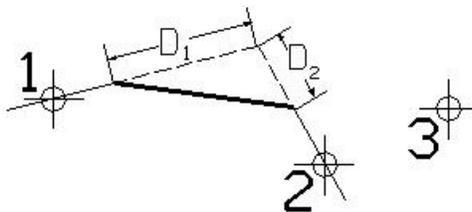
- Two lines — The original lines are trimmed and a third line element forms the chamfer.
- Adjacent segments of a line string or shape — An additional vertex is inserted and the common vertex is adjusted to form the chamfer.



Tool Settings	Effect
Distance 1	First element or segment identified (step 2).
Distance 2	Second element or segment identified (step 3).

To construct a chamfer

1. Select the *Construct Chamfer* tool.
2. Identify the first line or segment.
3. Identify the second line or segment.
If the first data point identifies a line element, the second data point must also identify a line element. If the first data point identifies a segment of a line string or shape, the second data point must identify an adjacent segment of the same element.
4. Accept the chamfer.



Chamfer. D1 denotes Distance 1. D2 denotes Distance 2.